

respectively; and

wherein the first and second main pump capacitors are prebooted to a first predetermined level by the first and second preboot capacitors during the first and second phases, respectively, wherein the first predetermined level moves to a second predetermined level in response to the primary phase generator during the first and second phases, respectively, wherein the second predetermined level is [moves]moved to a third predetermined level in response to the secondary phase generator during the first and second phases, respectively, and wherein the third predetermined level is dumped to the first and second gating devices, during the first and second phases, respectively.

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on February 19, 2002, and the references cited therewith.

Claims 3-5, 8, 10, 19, and 20 are amended; as a result, claims 1-42 remain pending in this application.

Specification Objections

The specification has been amended to overcome the objections.

Drawing objections

Applicant respectfully objects and requests the Examiner to provide a reference in M.P.E.P or 37 C.F.R. that describes the requirement of text labels in the boxes in figures.

37 CFR
1-84(0)

First § 102 Rejection of the Claims

Claims 1-5, 7, 8, 10, 12, 14, 15, 17, 19-26, and 35-42 were rejected under 35 USC § 102(b) as being anticipated by Merritt (U.S. Patent No. 5,828,095).

Applicant traverses the rejection of claims 1-5, 7, 8, 10, 12, 14, 15, 17, 19-26, and 35-42. Applicant finds that Merritt does not teach each element of claims 1-5, 7, 8, 10, 12, 14, 15, 17, 19-26, and 35-42. Applicant will address the rejections in detail as follows:

Claim 1

The rejection stated

Note Fig. 9, where the recited "plural phase generators" are formed by the elements within circuit 1020; the "first and second preboot capacitors" are elements 1380 and 1410; the "first and second main pump capacitors" are elements 1480 and 1500; the "first and second preboot precharge capacitors" are elements 1640 and 1660; and the "first and second gating devices" are any two of the switching FETs in the figure. The primary and secondary phase generators of claim 5 are formed by any combination of circuits 1100, 1020 and the remaining gates to the left of capacitors 1640 and 1660 in the figure. The "sharing transistors" of claim 41 are FETs 1920 and 1940.

Applicant traverses the rejection of claim 1 as follows:

In Fig. 9, and in column 8, lines 12-16, Merritt discloses a single two-phase generator 1020 and does not disclose plural phase generators as stated in the office action. Claim 1 in the application recites a plurality of phase generators. Support for the plurality of phase generators can be found in Figure 4 and on page 9, lines 12-16, of the specification.

*wrong
they are
plurality
gen*

Further, in Fig. 9, and in column 8, lines 51-52, Merritt discloses main pump capacitors 1380 and 1410 and does not disclose first and second preboot capacitors. In Fig. 9, it can be seen that the gates of capacitors 1380 and 1410 are connected to transistors 134 and 136, respectively, which in turn are coupled to the Vccp (output node). Claim 1 in the application recites first and second preboot capacitors coupled to a plurality of phase generators.

*no
they're
preboot
caps*

Furthermore, in Fig. 9, and in column 8, lines 64-65, and in column 10, lines 1-24, Merritt discloses capacitors 1480 and 1500 that merely drive the gates of transistors 134 and 136 that allow the main pump capacitors to pass charge to output (Vccp). They are not main pump capacitors as stated in the office action. Claim 1 and Figure 4 of the application recite first and second main pump capacitors 240A and 240B.

why not?

In addition, in Fig. 9 and in column 9, lines 9-10, and lines 61-62 and in column 10, lines 13-24, Merritt discloses first and second pre-boot capacitors 1640 and 1660. They are not pre-boot pre-charge capacitors as stated in the office action. The circuit disclosed in Fig. 9 in Merritt, does not have pre-boot pre-charge capacitors. Claim 1 and Figure 4 in the application recite first and second pre-boot pre-charge capacitors 474 and 476.

why not?

Therefore, all of the elements of claim 1 are not found in the embodiment shown in Fig. 9 of the Merritt patent. Reconsideration of claim 1 is respectfully solicited.

Claim 5

The rejection stated "The primary and secondary phase generators of claim 5 are formed by any combination of circuits 1100, 1020 and the remaining gates to the left of capacitors 1640 and 1660 in the figure."

The circuits 1100 and 1020 disclosed in Fig. 9, and in column 8, lines 12-16, and lines 21-23 together form a single primary phase generator to provide two logical phase signals that are out of phase. Merritt does not disclose in Fig. 9 two phase generators, i.e., the primary and secondary phase generators as stated in the office action. Claim 5 in the application recites both primary and secondary phase generators that each generate two logical phase signals, for a total of four logical phase signals. Support for the primary and secondary phase generators can be found in Figures 2 and 4, page 7, lines 22-26, and page 9, lines 13-15, of the application.

Wrong
it doesn't
recite
that

Therefore, all of the elements of claim 5 are not found in the embodiment shown in Fig. 9 of the Merritt patent. Reconsideration of claim 5 is respectfully solicited.

Claim 41

The rejection stated that the sharing transistors of claim 41 are FETs 1920 and 1940.

Applicant respectfully brings to the Examiner's attention that there are no sharing transistors recited in claim 41.

Merritt does not disclose FETs 1920 and 1940 in Fig. 9 as sharing transistors as stated in the office action. In column 10, line 8, Merritt discloses FETs 1920 and 1940 as clamping transistors that clamp the gate of gating transistors 134 and 136, gating to one threshold voltage higher than main pump capacitors 1380 and 1410, respectively.

clm 41
does

Therefore, all of the elements of claim 41 are not found in the embodiment shown in Fig. 9 of the Merritt patent. Reconsideration of claim 41 is respectfully solicited.

Claims 2-4, 7-8, 10, 12, 14, 15, 17, 19-26, 35-40, and 42

Applicant traverses the rejection of claims 2-4, 7-8, 10, 12, 14, 15, 17, 19-26, 35-40, and 42. Applicant finds that the elements of claims 2-4, 7-8, 10, 12, 14, 15, 17, 19-26, 35-40, and 42 were not shown, since Applicant finds no teachings in the cited reference of all of the elements, as recited in claims 2-4, 7-8, 10, 12, 14, 15, 17, 19-26, 35-40, and 42. Applicant repeats the arguments of claims 1, 5, and 41, and requests reconsideration and allowance of claims 2-4, 7-8, 10, 12, 14, 15, 17, 19-26, 35-40, and 42.

Second § 102 Rejection of the Claims

Claims 3, 5, 19, and 20 were rejected under 35 USC § 102(e) as being anticipated by Cha (U.S. Patent No. 6,225,854). Applicant does not admit that the Cha patent is prior art to the present invention and reserves the right to swear behind this patent at a later date. Nonetheless, Applicant believes the claims of the present invention are distinguishable over this reference.

Applicant traverses the rejection of claims 3, 5, 19, and 20. Applicant finds that Cha does not teach each element of claims 3, 5, 19, and 20. Applicant will address the rejections in detail as follows:

The rejection stated:

Note-Fig.2, where the recited "plural phase generators" are the elements 16 and INV9; the "first and second preboot capacitors" are elements C1 and C3; the "first and second main pump capacitors" are elements C2 and C4; and the "first and second gating devices" are any two of the switching FETs in the figure.

Claims 3, 5, 19, and 20

Applicant traverses the rejection of claim 3 as follows:

In Fig. 2, and in column 8, lines 12-16, Cha discloses a conventional boosting circuit including a single phase generator 14 and does not disclose plural phase generators as recited in claims 3, 5, 19, and 20. Support for plurality of phase generators can be found in Figure 4 and on page 9, lines 12-16, of the specification.

Further, claims 3, 5, 19, and 20, as now amended, recite "first and second pre-boot pre-charge capacitors coupled to the first and second preboot capacitors." In contrast, in Fig. 2, Cha does not disclose first and second pre-boot pre-charge capacitors coupled to the first and second preboot capacitors. Therefore, all of the elements of claims 3, 5, 19, and 20 are not found in the Cha patent. Reconsideration and allowance of claims 3, 5, 19, and 20 is respectfully solicited.

§ 103 Rejection of the Claims

Claims 6, 9, 11, 13, 16, 18, and 27-34 were rejected under 35 USC § 103(a) as being unpatentable over Merritt (U.S. Patent No. 5,828,095).

Applicant respectfully traverses the single-reference rejection.

Applicant respectfully finds that the above-cited reference fails to support a *prima facie* case of obviousness because the cited reference fails to teach or suggest all of the elements of Applicant's invention. Applicant will address the rejections in detail as follows:

Claims 6, 9, 11, 13, 16, and 18

The rejection stated

The claims reciting the specific power supply level (e.g., 1 to 2.5 volts) or delay time (e.g., 10 to 30 nanoseconds) are deemed to be obvious design expedients to those having ordinary skill in the art, since the skilled artisan will easily recognize that a supply voltage can be set to any desired value, as can the amount of delay element, without any unexpected results.

design
choice

Applicant finds that the elements of claims 6, 9, 11, 13, 16, and 18 were not shown, since Applicant finds no teaching in the cited reference of specified power supply voltages and delay times. Therefore, claims 6, 9, 11, 13, 16, and 18 are distinguishable from the Merritt patent.

Applicant repeats the arguments presented above for claim 5 in support of patentability of claims 6, 9, 11, 13, 16, and 18, respectively. In addition, Applicant respectfully submits claims 6, 9, 11, 13, 16, and 18 are patentable limitations of patentable base claim 5. Removal of the rejection and reconsideration of the claims is respectfully solicited.

As described above, if the Examiner is using personal knowledge or is taking Official Notice of the elements of claims 6, 9, 11, 13, 16, and 18 which are not found in the Merritt

patent, Applicant respectfully requests that the Examiner either provide a reference or references which describe such missing elements pursuant to M.P.E.P § 2144.03, or submit an affidavit as required by 37 C.F.R. § 1.104(d)(2)

Claims 27-34

The rejection stated

Claims 27-34 are also obvious modifications to Merritt because those skilled in the art will also recognize that the charge pump of Merritt is for use in any IC environment where a pumped voltage above the available supply voltage is required or desired.

Applicant repeats the arguments presented above with reference to claim 1 in support of patentability of claims 27-34. Removal of the rejection and reconsideration of the claims is respectfully solicited.

As described above, if the Examiner is using personal knowledge or is taking Official Notice of the elements of claims 27-34 which are not found in the Merritt patent, Applicant respectfully requests that the Examiner either provide a reference or references which describe such missing elements pursuant to M.P.E.P § 2144.03, or submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Kash Nama, at (603) 888-7958 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

TODD A. MERRITT

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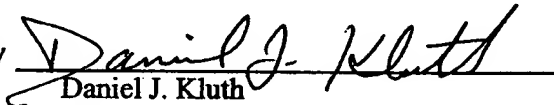
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By


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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this day of May, 2002.

Name

Tina Pugh


Signature